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Remarks/Arguments

Drawings

Item 4:

In response to the objection to Figures 3 and 4, Applicants amend Figures 3 and 4 to include the expression "Prior Art." Applicants respectfully request reconsideration of the objection.

Specification

Item 5-8:

In response to the objection to the abstract of the disclosure, Applicants amend the abstract which appears on page 2 of this document. Applicants respectfully request reconsideration of the objection in light of the amendments.

Claim Objections

Item 9-10:

In response to the objection to claim 7, claim 7 is amended as proposed by the Examiner to correct the lack of antecedent basis for "the indentation" and "the extension." Applicants respectfully request reconsideration of the objection in light of the amendment.

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Claim Rejections – 35 USC 112

Item 11-14:

Claim 1 has been amended to clarify the structure claimed in accordance with the description and figures. Longitudinal lengths of the different parts of the metal plate (central part, arm, connecting region) have been mentioned in accordance with Figure 7. "Ends" of side arms inserted in the glass beads have been added and support for this amendment can be found in the description on page 5, line 31, to page 6, line 5, and in Figures 5 and 6.

Claim 2 has been amended to recite that each cathode has the same support means.

In Claim 5, the term "region" has been deleted. Also, the "wherein" clause has been reworded to further clarify the claimed invention in claim 1 and claim 5.

In response to the rejections in Items 11-14, Applicants have amended claims 1, 2 and 5 to more clearly characterize the claimed invention; as such, Applicants respectfully request reconsideration.

Claim Rejections – 35 USC 102

Item 16-17:

Applicants point out that claims 1 and 8 are currently amended to more clearly characterize the claimed invention. Applicants respectfully assert that amended claim 1 is not anticipated by Takanashi et al. (USPN 4071803), because the novel combination of features of claim 1 are not disclosed in Takanashi.

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In Takanashi, the part identified as "side arm" in the office action does not correlate to the "side arm" in claims 1 and 8. Rather the alleged "side arms" in the office action are "ends," because they are connected to the support pillars (24). In Applicants' Invention, the "ends" of a "side arm" connect to the beads. Also, the component in Takanashi designated as "region" in office action is not the "connecting region" of claim 1 or the "region" in claim 8, but rather serves as a "side arm," because it connects to ends which connect to the support pillars, in a fashion as described in claims 1 and 8.

In light of the above mentioned distinction between Takanashi and amended claims 1 and 8, Applicants assert that claim 1 is not anticipate.

Claim Rejections – 35 USC 103

Items 18-30:

Claims 1, 2, 4, and 6-8 stand rejected as being obvious in light of Puhak (USPN 4151411) in view of Nagao (USPN 3772558).

Puhak describes a cathode support for a gun assembly comprising cathode positioning members (43a, 43b, 43c), the folded ends of which are inserted into glass bead (19a, 19b) and wires rods (63) partially surrounding (73, 74) the cathode having an eyelet and arms extending on each side of the central part to attach the eyelet to the positioning member. Puhak does not disclose a metal plate, as admitted in the office action, surrounding the eyelet with arms extending from central part terminated with ends inserted into glass bead, but rather comprises a combination of positioning members and wires rods which is significantly different than the claimed invention. Further, Puhak illustrates the use of the claimed invention in gun assemblies with multiple cathode in Figures 1, 2, 3, 4, and 6, wherein the cathodes are in a inline configuration (i.e. linear), with no suggestion of a delta type configuration (i.e. triangular). Also, Puhak in col. 3, lines 20-23, states:

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"The invention pertains to a cathode support member that employs a much reduced mass of material, which in turn lessens the heat sink characteristic and thereby promotes more rapid cathode warm-up. In describing the invention, attention is directed to FIGS. 4, 5A, 5B and 6 wherein the cathode support means of the invention utilizes the previously described cathode positioning members 43a, 43b and 43c. The parallel sides or skirt-like walls 51 and 52 provide shielding, for example, for cathode sleeve 59a, therefore the cathode shielding eyelet has been eliminated."

In sum, Puhak shows only applicability to an inline cathode configuration for CRTs with multiple cathodes and is concerned with reducing the mass of material in the cathode support area to lessen the heat sink capability of support, which suggests that heat sinking is a problem in CRTs.

Nagao (USPN 3772558), in the other hand, teaches a cathode support structure that "prevents the electron gun electrodes from getting out of alignment with one another so to prevent degradation of the reproduced picture quality" (in the Abstract). To provide better support, metal plates are suggested. However, Nagao does not teach nor suggest nor consider any concern of heat sink capability. Further, the example electron gun assembly in Nagao in Fig. 1 shows the use of the concept in Nagao to a delta gun configuration.

In the office action, Puhak is combined with Nagao on the grounds that it would be obvious to couple the teachings together on the premise that "it would be obvious to one having ordinary skill in the art at the time the invention was made to use metal plates, instead of metal rods to allow for a more secure cathode arrangement. Applicants disagree that those skilled in the art would find it obvious to combine the teachings of the two references together for several reasons.

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First, Puhak only shows examples for inline electron gun systems and Nagao only shows an example for a delta electron gun system. These

configurations are so substantially different from one another that one skilled in the art would not find it obvious to combine them together, because neither reference shows nor suggests interchangeability of its features with the other.

Second, Puhak does not suggest in anyway that there are structure support deficiencies associated with its configuration to cause one to consider using metal plates. As such, there is no motivation to incorporate plates as replacements for wires. In fact, one looking at the illustrated examples in Puhak would likely conclude that there are no structure support deficiencies, because each cathode is supported by two wire elements on opposite sides of each cathode.

Third, Puhak, as mentioned above with reference to col. 3, lines 20-23, therein, specifically asserts the desirability to reduce the mass of material in the vicinity of the cathode support member. This clearly stated objective actually teaches away from combining Puhak with Nagao because one skilled in the art would know that the use of metal plates with "more surface area at attachment points" would actually increase the heat sink effect because of greater ease of thermal conductivity. Further, one skilled in the art would consider metal plates as adding more material with respect to the mass needed with wires. With this in mind, one with knowledge of Puhak would not want to add more material to the cathode support area, such as by using plates instead of wires.

Fourth, even if there were motivation to combine the teachings of Puhak with Nagao, the combination of the two references would not make claims 1, 2, 4, and 6-8 obvious. The plate structure disclosed in Nagao teaches a plate structure with constant width (see Figs. 2 and 3). The amended claims 1, 2, 4, 6, and 7, however, includes the limitation that the "connecting region that connects the

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central part to the side arms" being "a width L which is greater than the width L" of the side arms in the same direction." Amended claim 8 also has the limitation (in different words). There is no suggestion in either Nagao or Puhak as why one would want to or even consider having such dimensional features as disclosed in amended claims 1, 2, 4, and 6-8.

In light of the fact that the claims have been amended to include more subject matter and the above-mentioned assertions as to why the amended claims are not obvious based on Puhak in view of Nagao, Applicants request reconsideration of the rejection to the claims.

Allowable Subject Matter

Items 31-34:

Applicants kindly acknowledge the indication of allowability to Claims 3 and 5, providing a rewriting of the claims to include the limitations of the base claim and any intervening claims.

Applicants assert that claim 3 is in condition for allowance in light of the amendments to claim 1 in response to the rejection under 35 USC 112 in Item 12.

Applicants assert that claim 5 is in condition for allowance in light of the amendments to claim 1 in response to the rejection under 35 USC 112 in Item 12 and the rejection to claim 5 under 35 USC 112 in Item 14.

Applicants submit that the claims are in condition for allowance and respectfully request reconsideration as well as withdrawal of the rejections. If the Examiner has any questions which would expedite the prosecution of this case, the Examiner is requested to contact the undersigned at 717 295-6207.

No fee is believed to have been incurred by virtue of this amendment. However, if a fee is incurred on the basis of this amendment, please charge such fee against deposit account 07-0832.

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Appln. No. 10/797,682
 Amendment Dated Reply to Office Action of 06/16/2005
ANNOTATED SHEET SHOWING CHANGES

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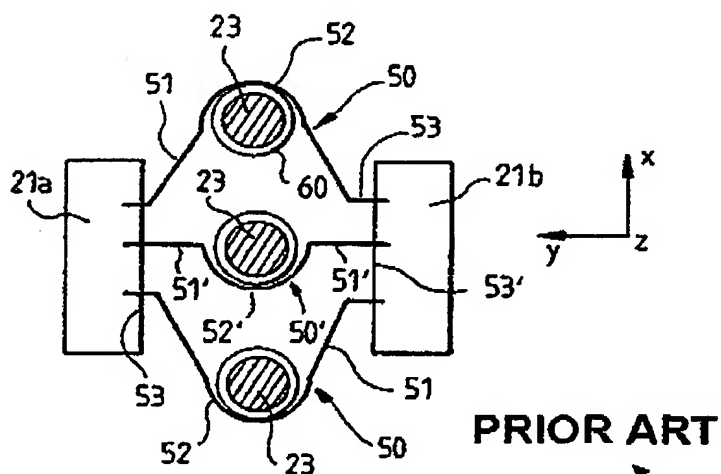


FIG. 3

Expression "PRIOR ART"
 Added

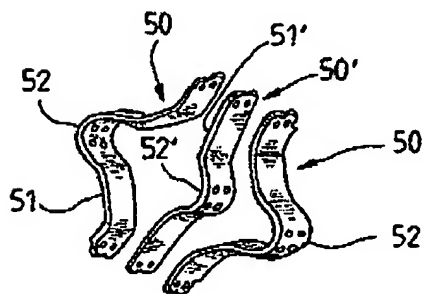


FIG. 4